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A comparison between cassava starch production at small-scale in Vietnam and in Colombia

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Abstract

In Colombia and in Vietnam, small-scale cassava starch processing is conducted at similar scales but with contrasted extraction technologies. Based on the methodology of diagnosis previously applied in Vietnam, two set of trials with two different cassava cultivars (var. mper183 and var. algodona) were carried out in a typical processing plant from Northern Cauca in Colombia. Moisture, starch, crude fibres and ash content analysis were carried out on samples collected from the manufacturing process to establish the mass balance of starch. Production capacity, water consumption, electrical requirements and capital-labor costs per tonne of starch (12% moisture) were also reported. The manufacturing process enabled 65% recovery of the starch present in fresh roots, with no significant change observed in the composition of starch for the two varieties. The bottleneck of the manufacturing process occurred at extraction stage where low capacity was observed (0.3 t of peeled roots per hour). Water consumption per ton of starch was 67 m³, in which washing, rasping, and extraction stages accounted for 9, 3, and 42 m³, respectively. Electrical power per tonne of starch was 59 kWh, in which, washing, rasping, and extraction stages accounted for 8, 14 and 38 kWh. The comparison proposed in this study allowed to recommend technological options for small-scale cassava processing industries.
